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Conference Abstract

Automated Identification of Citizen Science Observations for Ecological Studies

Pierre Bonnet[‡,§], Christophe Botella[‡,|,¶], François Munoz[#], Pascal Monestiez[|], Mathias Chouet[‡], Hervé Goëau[‡,§], Alexis Joly[¶]

‡ AMAP, Univ Montpellier, CIRAD, CNRS, INRA, IRD, Montpellier, France
§ CIRAD, UMR AMAP, Montpellier, France
| BioSP, INRA, Site Agroparc, Avignon, France
¶ Inria ZENITH team, Montpellier, France
# Université Grenoble Alpes, Laboratoire d'Écologie Alpine, Grenoble, France

Corresponding author: Pierre Bonnet (pierre.bonnet@cirad.fr)

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Abstract

Pl@ntNet is an international initiative which was the first one attempting to combine the force of citizens networks with automated identification tools based on machine learning technologies (Joly et al. 2014). Launched in 2009 by a consortium involving research institutes in computer sciences, ecology and agriculture, it was the starting point of several scientific and technological productions (Goëau et al. 2012) which finally led to the first release of the Pl@ntNet app (iOS in February 2013 (Goëau et al. 2013) and Android (Goëau et al. 2014) the following year). Initially based on 800 plant species, the app was progressively enlarged to thousands of species of the European, North American and tropical regions. Nowadays, the app covers more than 15 000 species and is adapted to 22 regional and thematic contexts, such as the Andean plant species, the wild salads of southern Europe, the indigenous trees species of South Africa, the flora of the Indian Ocean Islands, the New Caledonian Flora, etc. The app is translated in 11 languages and is being used by more than 3 millions of end-users all over the world, mostly in Europe and the US.

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The analysis of the data collected by Pl@ntnet users, which represent more than 24 millions of observations up to now, has a high potential for different ecological and management questions. A recent work (Botella et al. 2018), in particular, did show that the stream of Pl@ntNet observations could allow a fine-grained and regular monitoring of some species of interest such as invasive ones. However, this requires cautious considerations about the contexts in which the application is used. In this talk, we will synthesize the results of this study and present another one related to phenology. Indeed, as the phenological stage of the observed plants is also recorded, these data offer a rich and unique material for phenological studies at large geographical or taxonomical scale. We will share preliminary results obtained on some important pantropical species (such as the *Melia azedarach* L., and the *Lantana camara* L.), for which we have detected significant intercontinental phenological patterns, among the project data.

Keywords

Citizen science, Automated plant identification, Machine learning, Species distribution, Phenology

Presenting author

Pierre Bonnet

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